

CHARAX AND THE KARKHEH

BY

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(Pl. V-VIII)

I. THE STATE OF CHARACENE

Upon returning to Iran from his successful campaigns in India, Alexander the Great remained the winter of 335-334 B.C. at the city of Susa in Khuzistan. Later, during the spring of 334, he gathered his fleet, departed Susa and sailed south down the Eulaeus River. The larger body of the fleet halted just inside the mouth of the Eulaeus. Alexander, however, continued with a few especially adapted, faster ships out through the river's discharge channel and along the coast to the mouth of the Tigris. The remaining ships, some of which were disabled, passed through an artificial canal which joined the Eulaeus with the Tigris¹). Near the point of confluence of the Tigris and the Eulaeus (canal) Pliny states that Alexander ordered a city to be built. This city, Alexandria on the Tigris, was constructed on an artificial mound to protect the site from the flood waters of the adjoining rivers²). Alexander no doubt intended the new town to serve as a major commercial port for his eastern capital of Babylon; a port which would handle the rich sea trade from both newly conquered India and from the Arabian peninsula. To provide a sufficient population Alexander directed that the city should be settled partly by invalid Macedonian soldiers drawn from the ranks of his returning armies and partly by a transfer of residents from the nearby city of Durine. The Macedonians were established in a *deme* (quarter) of the port called Pella after Alexander's own town of birth³).

During the subsequent years of the Seleucid Period Alexandria did

1) Arrian, *Anabasis* VII. 7.

2) For classical sources on the name Alexandria on the Tigris see W. Tarn, *Alexander the Great, Sources and Studies*, Cambridge 1948, p. 241-3; also 234, 236, 243 for the city's possible alternate name, Alexandria in Susiana.

3) Pliny, *Natural History* VI, 138.

not wholly live up to its founder's expectations. We know, for example, that by the latter half of the 3rd century B.C., the independent Arab city of Gerrha, situated on the lower Persian Gulf, had become the major trans-shipping port for goods from India and Arabia, to both the Seleucid territories and to Ptolemaic Egypt¹). Alexandria on the Tigris, meanwhile, was destroyed by flood²). These established channels of commerce in the Persian Gulf thereafter remained largely unchanged until Antiochus IV acceded to the Seleucid throne. Antiochus proved an energetic and ambitious ruler who was determined to stave up the faltering economy of his realm. To further this end he attempted a diversion of the Indian sea trade to his own domains. A key factor in the scheme had been the rebuilding of Alexandria as an Antiochia³). At the completion of the restored port (in 166-165 B.C.) Antiochus appointed Hyspaosines, son of a certain Sagdodonacus, as governor (eparch) of Antiochia and its surrounding district⁴). Though Antiochia did enjoy a new measure of prosperity, the effect on the whole kingdom proved of little lasting value. Antiochus' early death in 163 B.C. thus marked an end of the King's plans to revitalize the nation's economy. But now too, centralized Seleucid control throughout the entire realm was greatly weakened as rival claimants for the throne continued to wage civil strife in Syria.

As an eventual result of this period of internal instability, a number of small areas from within the empire cast off their unwanted political ties to the Seleucids and asserted themselves as independent states. Elymais, Persis and Parthia were the most notable of these new "king-

1) On Gerrha see W. Tarn, *The Greeks in Bactria and India*, 2nd ed., Cambridge, 1951, p. 63 and 367; also M. Rostovtzeff, *The Social and Economic History of the Hellenistic World*, Oxford, 1941, I, p. 457.

2) Pliny VI, 139.

3) *Ibid. loc. cit.* On the identification of Antiochus IV as the Seleucid restorer of Alexandria see S. Nodelman, 'A Preliminary History of Characene', *Berytus*, XIII, 1960, p. 85 and fn 20.

4) Pliny, *loc. cit.* gives the name as Spaosines, while the Greek form Hyspaosines, as here used, appears on numerous coins. See A. Bellinger, 'Hyspaosines of Charax', *Yale Classical Studies*, 1942, p. 56, and G. Le Rider, 'Monnaies de Characène', *Syria* XXXVI, 1959, p. 230-231. On Sagdodonacus see Bellinger, *op. cit.* p. 54.

doms". Hyspaosines, on the other hand, seems to have remained loyal to the Seleucid dynasty, though he too most probably found himself a virtually independent sovereign at Antiochia. His contentment to continue as eparch only was no doubt prompted by the knowledge that so maintained, there would be no interruption in the lucrative trade which the refounding of Antiochus had caused to be channeled through that city to the empire capital of Seleucia on the Tigris ¹⁾. Other former vassals of the Seleucids proved more ambitious. By 141 B.C. Mithradates I of Parthia had defeated the Seleucid contender Demetrius II in Mesopotamia and shortly thereafter took Seleucia ²⁾. Although Demetrius later recaptured Mesopotamia, the threat and closeness of the Parthian menace, apparently persuaded Hyspaosines to declare himself independent ruler in Antiochia. Nodelman suggests that this final break from Seleucid authority occurred some time between 141 and 139 B.C. when Demetrius was again defeated and further taken captive by Mithradates ³⁾.

But alone, Hyspaosines could not indefinitely forestall the renewed Parthian advance and in 121/20 B.C. we find bronze coins of his being overstruck with a type of Mithradates II. This occurrence as first noted by Newell, would indicate final and complete conquest by the Parthians⁴⁾.

Though defeated Hyspaosines was allowed to retain his small kingdom at the head of the Persian Gulf. As a vassal to the Parthian throne his old authority, however, was much weakened and restricted.

Some time during the continuing reign of Hyspaosines the city walls of Antiochia were again destroyed by flood. Pliny notes that to protect his capital Hyspaosines caused new embankments to be raised which extended in length, a distance of nearly 2 miles (3.2 Km) ⁵⁾. Because of this impressive rebuilding Josephus and other writers of the late classi-

1) Nodelman *op. cit.* p. 86.

2) N. Debevoise, *A Political History of Parthia*, Chicago 1938, p. 23.

3) Nodelman *op. cit.* p. 87.

4) E. Newell, *Mithradates of Parthia and Hyspaosines of Charax* NNM, 26, 1925, Bellinger *op. cit.* p. 60-61.

5) Pliny VI, 138.

cal period, refer to the city as Charax Spasinou ¹⁾ (Palisade of Spasines or Hypsaosines) ²⁾. In the Palmyrene Inscription the city was usually given the Aramaic form of Karak Ispasina ³⁾ though it was sometimes called Karkā de Maisān ⁴⁾ (fortress of Maisān) ⁵⁾.

The state founded by Hypsoasines in lower Mesopotamia, was first identified as Mesene by Strabo during the late first century B.C. ⁶⁾. The term is probably a Greek adoption of an Aramaic word ⁷⁾. Pliny and Ptolemy call the region surrounding Charax, Characene, a term which appears to designate almost the identical extent of land as Mesene ⁸⁾. Characene which is no doubt derived from Charax would thus appear more of a political definition whereas the older Mesene gave geographical meaning. The Aramaic form of Maisān was later adopted by the Arab conquerors and so survived as the name of the whole of Southern Iraq until the late middle ages ⁹⁾.

During the some 350 years of its existence Characene nearly always remained under a varying degree of Parthian political control. Through such long forced isolation from the west, a gradual lessening of the old Greek cultural influences inevitably occurred.

Continued vassalage to Parthia, however, did not interrupt the prosperity which the Characeneans enjoyed as major promotional agents of east-west commerce. By the first century A.D. new and quite lucrative overland trade routes had been established with the Nabataean

1) Josephus, *Antiquities* I, 6, 4.

2) Bellinger *op. cit.*, observes that Polybius has also used the Greek *χάραξ*, meaning stake, in a collective sense.

3) *Corpus Inscr. Semit.* II, 3928.

4) J. Starcky, *Inventaire des Inscriptions de Palmyre*, X, Damascus, 1949 p. 13-14.

5) On the meaning of Karkha see F. Jean and J. Hoflijzer, *Dictionnaire des Inscriptions Semitiques d. l'Ouest*, Leiden, 1960, p. 127.

6) Strabo 16, IV, 1.

7) Bellinger suggests that in this form, Mesene may also have been the name of the earlier Seleucid eparchy at the head of the Persian Gulf while Nodelman claims the area to have constituted a part of the eparchy of the Erythraean Sea. But no classical sources confirm either of these two equations. See Bellinger *op. cit.* p. 55, Nodelman *op. cit.* p. 85, 92.

8) Pliny VI, 136, Ptolemy, *Geography*. VI, 5.

9) See M. Streck, *Encyclopaedia of Islam*, 'Maisān' p. 146 sq. on variant forms of the word Mesene. Also see J. Weissbach, 'Mesene' in *Pauly-Wissowa*.

city of Petra. For more than a century the Nabataeans, through Charax, thus became major providers of a considerable eastern trade with the rich Roman west. Still other developing caravan routes joined Charax with the Syrian desert emporium of Palmyra. Following the assimilation of the Nabataean Kingdom by Rome in A.D. 106, the Palmyrenes were to enjoy a practical monopoly of such trade.

The centre of commerce within the Kingdom of Mesene, meanwhile, appears to have gradually moved south. By the third quarter of the first century Pliny mentions the city of Forāt, which was subject to the Kings of Characene, as being frequented by the people from Petra ¹). Palmyrene inscriptions of the second century also testify to successful caravan journeys undertaken between that city and both Charax and Forāt ²). Forāt was located some 11 miles (17.7 km) below Charax on the Tigris ³). The town of Apologos, situated across and down river from Forāt, appears at this time to have replaced Charax as the major port of the country ⁴). Nodelman suggests that Mithradates IV (A.D. 128-147) further moved the capital from Charax to Forat ⁵).

Because the economy of Characene depended largely on her own continued role as the dominant commercial center of the upper Persian Gulf, it is not surprising that the most complete surviving work of the Kingdom's best known citizen, Isidore of Charax, reflects this position. The *Mansiones Parthicae* (Parthian Stations) contains a description by that author of the major trans-Asiatic trade route within the Parthian domains ⁶).

Of the closing decades of the history of Characene, little is known. Even the question of whether the kingdom, during this later phase,

1) Pliny VI, 145.

2) Starcky *op. cit.* No. 81 p. 52; No. 112 p. 68; No. 114 p. 69 sq.

3) Pliny VI, 145.

4) *Periplus of the Erythraean Sea* (ed. Schoff) New York, 1912, XXXV-XXXVI p. 36; also see Weissbach, 'Maisān' in *Pauly-Wissowa*.

5) See Nodelman p. 113 sq. for the state of Characene during the reign of Mithradates.

6) Isidore of Charax, *Parthian Stations* (ed. Schoff) Commercial Museum, Philadelphia, 1914.

continued as a dependent province under a waning Parthian suzerainty remains conjectural. For the final sixty years we do not even have the coins, dated in Greek, which were to determine the reigns of almost all of the earlier Mesenean kings.

What we do know is that in A.D. 221/222 Ardashīr, Satrap of Persis, rose in revolt against his Parthian overlord Artabanus V. Ardashīr quickly gained the support of all Persis and shortly thereafter subdued the vassal state of Elymais. He next marched against Mesene, took Charax and Forāt and killed the last Characenean king called Bandu by Tabari ¹). Thus ended the dynasty of Hyspaosines.

Following the submission of Characene, Charax and Forāt were refounded as Astarabādh Ardashīr and Bahmān Ardashīr, by their Sasanian captor ²). The two cities, although much reduced in importance because of a subsequent lessening of trade with the west, still survived into the early Islamic period as the Arabic Kark Maisān (from Aramaic Karak Maisān) and Furāt Maisān also called Furāt al-Basra ³). By the 5th Century, meanwhile, Furāt had most certainly succeeded Karak Maisān as the provincial capital, for under its Syriac name of Perāt de Maishān this place is listed (between A.D. 410 and 605) in Nestorian church annals, as the chief city of Maisān ⁴). Gobl, following Herzfeld, has proposed that the mint monogram PR which appears on numerous Sasanian coins from the reign of Kobad I (A.D. 488-531) to that of Khusro II (A.D. 590-628), represents Perāt ⁵). Maisān and Furāt later appear as Umayyad mint cities; the former from 79 to 97 H. (A.D. 698/99-715/16) and the latter between 81 to 97 H. (A.D. 700/1-

1) Tabari, *Annales* (ed. De Goeje), Leiden 1965, Series II, p. 818. For further discussion on this name see F. Justi, *Iranisches Namenbuch* p. 62.

2) Tabari *op. cit.* Series I, p. 829.

3) See Yāqūt, *Muʿdjam* (ed. Wüstenfeld) IV p. 207 for Kark Maisān and III p. 860 for Furāt.

4) J. Chabot, *Synodicon Orientale*, Notices et extraits des Mss. des la Bible. Nat. XXXVII, Paris 1902, p. 272 and 478.

5) R. Gobl, "Aufbau der Münzprägung" in *Ein Asiatischer Stadt*, Band I, Wiesbaden 1954, p. 91. See also E. Herzfeld in *Trans. Intern. Num. Cong.* London, 1938 p. 425.

715/16)¹⁾. Furāt seems to have been finally abandoned by the mid 9th Century. Maisān, however, is mentioned by Mustawfī as late as 1340²⁾. After this date all references cease.

II. THE RIVERS OF KHUZISTAN AND THEIR HELLENISTIC NAMES

During the later Middle Ages, with the abandonment of Kark Maisān, the geographical identification of Maisān = Maishān, as more broadly applied to the whole of lower Mesopotamia, gradually fell from use. The Arabs tended to replace this older name with that of their own foundation, the capital and port of that district, Basra. Thereafter, and until the early 19th century when an expanding western scholarship directed renewed interest to the coins and classical references of Mesene, almost nothing was known of Characene, nor of its vanished cities. In 1817 the Frenchman, J. Saint-Martin prepared a lengthy study on the history and geography of the kingdom. Posthumously published in 1838, this work correctly placed Characene in the Mesopotamian delta area at the head of the Persian Gulf³⁾. In further attempting to locate Charax Spasinou, Saint-Martin identifies the modern Karun with the ancient Eulaeus and the Greek Pasitigris with the final length of the Tigris⁴⁾ (Shatt al-Arab). Now Arrian, as earlier noted (page 21), records that at the time of Alexander only a canal joined the Eulaeus and the Tigris. Pliny states that Alexandria = Charax was founded near the confluence of these two channels. By the early 19th century the only direct water route between the Karun (Saint-Martin's Eulaeus) and the Shatt al-Arab (Tigris) was the Haffār Canal which connects the two rivers just below the modern town of Khurramshahr in Iran (fig. 2). Saint-Martin therefore concludes that Charax must have

1) J. Walker, *Catalogue of Arab-Byzantine and Post-Reform Umayyad Coins*, British Museum, 1956. For Furāt p. 168 sq., for Maisān p. 185 sq.

2) Ḥamd-Allah Mustawfī, *Nuzbat al-Qulūb* (ed. Le Strange) Gibb Memorial Series, London, 1919, p. 46.

3) J. Saint-Martin, *Recherches sur l'histoire et la géographie de la Mésène et de la Characène*, Paris 1838, p. 5.

4) *Ibid.*, for Saint-Martin's identification of the Eulaeus see p. 119-129 and of the Pasitigris p. 86.

been located close to where the Haffār enters the Shatt¹⁾. But before pursuing the theories of Saint-Martin and later writers on the Hellenistic names of the Khuzistan rivers and the related problem of locating Charax, a brief description of these several rivers would seem necessary.

The major watercourse of Khuzistan is that of the Karun. This considerable river rises in the lower Zagros; flows in a temporarily divided course below Shushtar through the central Khuzistan plain, and then reunites above Ahwaz to continue south to the Persian Gulf (fig. 1). The Ab-i-Diz rises in Northern Khuzistan, flows south past Dizful and joins the Karun at Band-i-Qīr some 25 miles (40 km) north-northwest of Ahwaz. More important for this discussion however, is the Karkheh (Arabic Karkhā). This river after rising in Luristan, flows in a southerly direction and passes some two miles to the west of Susa. The Karkheh then continues south for approximately 55 miles (89.5 km) before diverging to the northwest where the river discharges into the Haur al-Hawizeh marsh. The greater volume of the Karkheh waters, under the succeeding names of Nahr Sābilah and Shuwaib then empty into the Tigris just below the town of al-Qurna in Iraq (fig. 1). The fourth and last river to be considered is at present called the Shāur (Shapour). This small stream rises from ground water and seepage from the Karkheh several miles west of the Karkheh and 10 miles (16 km) above Susa. It flows south past Susa and thereafter continues to the southwest in two separate arms. The eastern Shāur joins the Ab-i-Diz 45 miles (72 km) below Susa, while the western branch continues down to the near vicinity of Ahwaz where the waters are finally dispersed for irrigation. Aerial photographs of the area, however, clearly show that this second channel once joined the Karun at the modern village of Chinaibeh, $3\frac{1}{2}$ miles (5.8 km) below Ahwaz (fig. 1). Messrs Lee and Falcon have demonstrated that the

1) *Ibid.*, p. 117-122. The great French geographer d'Anville suggests already in 1779 that Charax Spasinou was located beside the Haffār. But he confuses the city as belonging to "Susiana" rather than Characene. See J. d'Anville, *l'Euphrate et le Tigre*, Paris, 1779, Map and p. 138 sq.

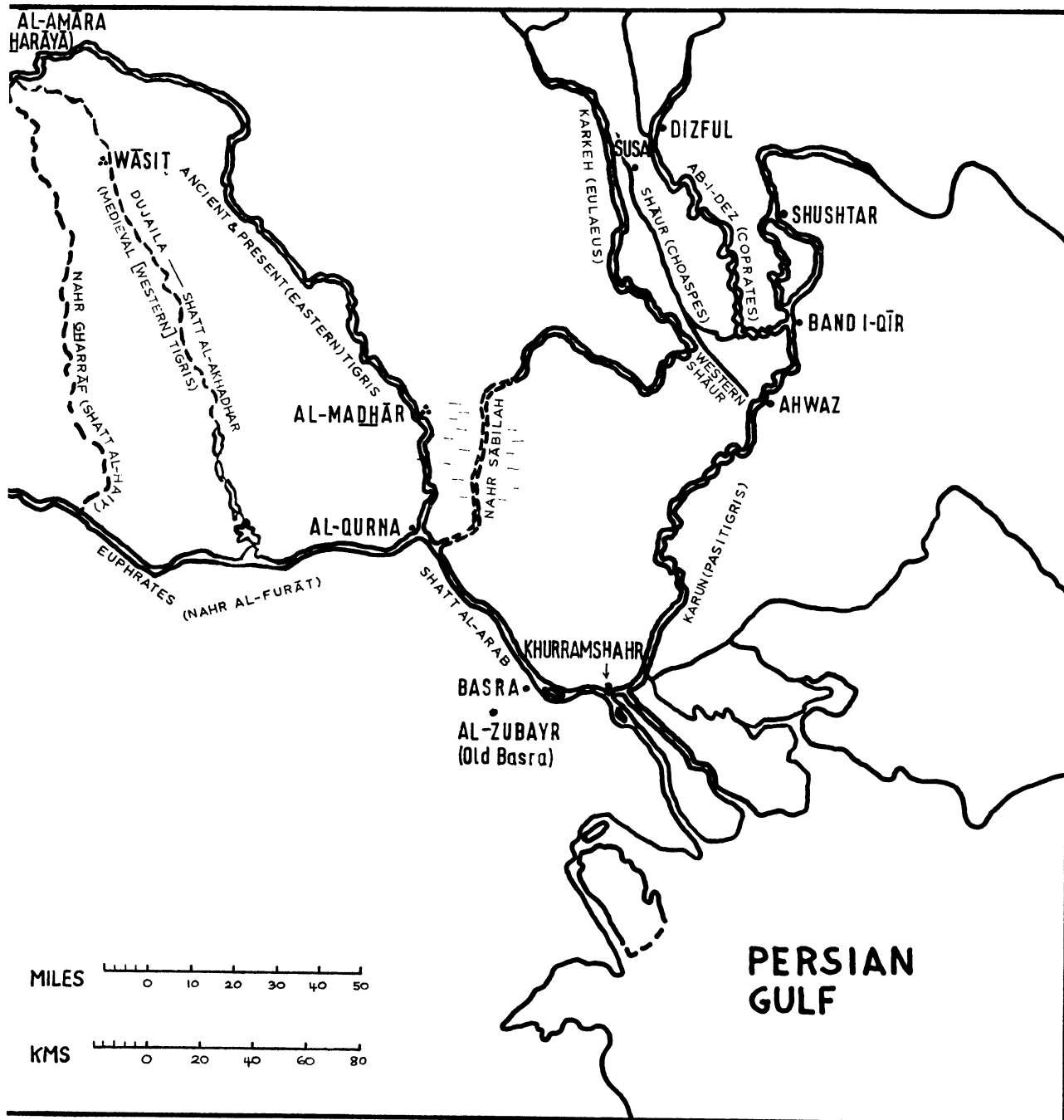


Fig. 1

lower Shāur is in fact an artificial canal¹⁾. It was probably constructed, or at least reconstructed, under the Sasanian King Shapour I (A.D. 241-272) after whom the canal is presumably named. Yet an earlier, now dry arm of this river, entering the Diz 30 miles (48 km) below Susa, separated from the present channel just above the point where the Shāur now passes into an artificial trough cut through a low, natural barrier of rock. The later cut channel, certainly a Sasanian feature, thus allowed the Shāur to flow farther to the south of the upper branch. The upper channel, now called Qomāt, shows a natural meander pattern and must represent the ancient lower course of the Choaspes = Qomāt-Shāur.

When carefully compared, accounts of the Khuzistan rivers as presented by various classical writers, tend to be extremely confusing. Such inconsistent coverage of the same subject matter is partly explained by the fact that few of the later Greek and Roman geographers actually visited Mesopotamia or Persia. They were thus required to rely upon material provided either by contemporary travellers or by earlier writers. We accordingly find authors of the first century of our era still referring to accounts set down nearly 350 years earlier by the historians of Alexander. Because the rivers of lower Khuzistan and of the Mesopotamian delta have been subject to considerable alteration, and since, during the last centuries B.C., there had been a continuous accession of land within the marsh areas which bordered on the upper Persian Gulf, many of the older descriptions of this region were no longer valid by the first century. Other inconsistencies which are found, can only be the result of inaccurate or misunderstood sources.

Nearchus, the Admiral of Alexander, for example, states that upon arriving at the head of the Persian Gulf after his voyage from India, he cast anchor at the mouth of the Euphrates. Thereafter he directed his ships through the lake (Chaldean Lakes) into which the Tigris discharges and so proceeded on to the mouth of the Pasitigris. Nearchus then

1) G. Lee and N. Falcon. 'The Geographical History of the Mesopotamian Plains', *Geog. Jour.* March, 1952 p. 33 and plate 3.

sailed up the Pasitigris, from which river he eventually reached Susa ¹⁾. In the *Anabasis*, Arrian states that after setting out from Susa, en route to Persepolis, Alexander crossed the Pasitigris ²⁾. The Pasitigris then if located to the east of Susa and if, within its own system it afforded a direct water passage to the Chaldean Lakes, could be no other river than the modern Karun ³⁾. Yet Strabo quotes an unknown source as saying that the Tigris at its outlet is called the Pasitigris ⁴⁾. But since Nearchus, who actually visited this area, identifies the Tigris and the Pasitigris as separate channels, the Strabo account must be regarded as incorrect.

Even greater uncertainty has persisted when past attempts have been made to identify the modern equivalents of the ancient Choaspes and Eulaeus Rivers of Khuzistan. Pliny, for example, states that the Eulaeus flows past the citadel of Susa ⁵⁾. Strabo says that Susa is situated on the Choaspes River ⁶⁾. The Greek inscriptions recovered by the French excavations at Susa give the name of the city as Seleucia on the Eulaeus ⁷⁾. In Quintus Curtius we find the statement that Alexander came to the Choaspes and “then entered Susa” ⁸⁾.

Pliny, perhaps, provides a key to this confusion when noting that the Eulaeus, which rises in Media, conceals itself in the earth for a short distance, after which the river flows past Susa ⁹⁾. The Karkheh River, which is the possible modern equivalent of the Eulaeus, certainly does not flow underground on any length of its upper course. It would seem possible, however, that the sudden rising of the Shāur, close to the Karkheh bed above Susa, may have been rightly considered by classical writers and travellers, to have been partly conditioned by ground water seeping through from the Karkheh. This it is possible that in antiquity, both the Karkheh and the Qomāt-Shāur were considered separate arms of

1) Arrian, *Anabasis* III, 17.

2) Arrian, *Indica* XXXIX, 16, 17.

3) The water connection to Susa would be the Karun to the Ab-i-Diz, to the Qomāt-Shāur which flows directly to the west of the mound of Susa.

4) Strabo, 15, III, 3.

5) Pliny, VI, 31.

6) Strabo, 15, III, 3.

7) S.E.G. VII, 1-34, also see C.R.A.I. 1930, 31, 32, 33.

8) Quintus Curtius III, 100, 1.

9) Pliny VI, 31.

the same stream, i.e. the Eulaeus, and were at times both identified with that river (fig. 1). It is, however, equally clear, that the so-called two branches of the Eulaeus also retained separate identifications. Such an explanation could give clarification to the passage in Pliny which notes that the Kings of Persia drink no water except that of the Choaspes or of the Eulaeus ¹⁾. As to which of these two rivers is represented by the modern Karkheh and which by the smaller Shāur, we need only to refer to Herodotus (484-425 B.C.) who wrote a hundred years before Alexander. Like Quintus Curtius, Herodotus confirms in three separate passages that Susa was located on the banks of the Choaspes ²⁾. A further confirmation that the Choaspes is the Qomāt-Shāur is found in Strabo who says that after the Choaspes one crosses, not to the Eulaeus, (which would be the case of the Choaspes were the Karkheh and the Eulaeus the Shāur) but to the "Coprates [the modern Diz] and the Pasitigris" (the Karun) ³⁾. A final determinate is provided by the fact that the Shāur has never been more than an affluent of the Diz-Karun system, whereas the Eulaeus, as described by both Strabo ⁴⁾ and Arrian ⁵⁾, at one time entered directly into the (Chaldean) Lakes and the sea. It will be later shown (page 37) that an earlier course of the modern Karkheh did indeed empty into the lakes at the mouth of the Persian Gulf. Thus the historical Eulaeus can only have been represented by an older, lower course of the present Karkheh. The early Greek occupants of Susa/Seleucia had good reason to identify their city with the more western branch of the Eulaeus = Karkheh. For this channel was not only the major arm of the river but also the channel which provided the most direct passage to the Persian Gulf, and by canal, to the Tigris. Perhaps then, the confusion regarding the Choaspes and Eulaeus has arisen from the fact that during the classical period the name Eulaeus was often applied to both streams, while the eastern branch, the present Shāur, was also given the more specific name of Choaspes.

1) Pliny XXI, 21.

2) Herodotus I, 188 and V, 49, 52.

3) Strabo 15, III, 1.

4) *Ibid.*, 15, III, 3, Strabo here quotes a lost work of Polycleitus.

5) Arrian, *Anabasis* VII 7.

Saint-Martin's incorrect equation of the Eulaeus with the modern Karun has been generally accepted by the majority of later writers on the subject. Layard (1846), however, thought the Shāur to be the upper Eulaeus ¹⁾. Loftus (1857) mistakes an old irrigation canal branching off from the Karkheh before the river's bifurcation, for the lost Eulaeus channel. He further determines that river as flowing to the east of Susa and entering the Karun somewhere near Ahwaz ²⁾. This course represents, in part, the western Shāur which we have already noted as being an artificial construction of the Sasanian period. Rawlinson (1839) at first identifies the full length of the Karun as the Eulaeus ³⁾ but in a later paper (1857) accepts the Loftus theory ⁴⁾. Most of these writers also agree that the lower length of the Karun represents the Greek Pasitigris but suppose that below the confluence with their "Eulaeus = Shāur," the Pasitigris was also sometimes called the Eulaeus. Modern scholars now tend to quote the incorrect Eulaeus = Karun identification without mention of the Pasitigris ⁵⁾, a practice which only further confuses the issue. As to the true Eulaeus—the Karkheh—almost all recent writers have persisted in identifying this river as the ancient Choaspes ⁶⁾.

The primary reason why scholars have supposed the Karun to be the Eulaeus is of course the Haffār canal (fig. 2) which joins the Karun (Saint-Martin's Eulaeus) and the Shatt al-Arab (Tigris). Arrian's description of the Eulaeus-Tigris canal is thus, according to Saint-Martin and his school, well founded.

But a closer study of the Arab sources would place the building of

1) A. Layard, 'A Description of the Province of Khuzistan' *Jour. Roy. Geog. Soc.* XVI, 1846 p. 92.

2) W. Loftus, 'On the Determination of the River Eulaeus of the Greek Historians' *Jour. Roy. Geog. Soc.* XXVII, 1857, p. 128 sq.

3) H. Rawlinson, 'Notes on a March from Zohab', *Jour. Roy. Geog. Soc.* XI, 1839, p. 85.

4) H. Rawlinson, 'Notes on the Ancient Geography of Mohamrah and the Vicinity', *Jour. Roy. Geog. Soc.* XXVII 1857, p. 185 sq.

5) Nodelman *op. cit.* p. 84, Debevoise *op. cit.* p. 26 fn 111.

6) See J. de Morgan, 'Étude géographique sur la Susiane', *Mission scientifique en Perse*, Paris 1900, tom. 1, p. 16 and G. Le Rider, 'Suse sous les SéLucides et les Parthes', *Mém. Mission Arch. en Iran*, Paris 1960, tom. 37, p. 265. The Iranian scholar Ahmad Kisrawi in *Maqālāt-i Kisrawī*, Tehran, 1948 (Persian text), equates the Karkheh with both the Choaspes and the Eulaeus.

the Haffār at a much later date than that necessary for the Arrian reference. ẖudāma (880) speaks of a “New Canal”, the Nahr al-Jadīd, which was navigable for cargo ships plying between Ahwaz (on the Karun) and Basra (on the Shatt)¹. Muḳaddasī (985) refers to this water passage as the ‘Aḏudī channel and states that it was widened and dug out by the Buwayhid Prince ‘Aḏud al-Dawla (944-983). Before the widening of the ‘Aḏudī canal, Muḳaddasī notes that boats proceeding between Basra and Ahwaz were required to pass down the Dujayl (an Arabic designation of the Karun meaning Little Tigris) into the sea, and so up the Tigris estuary to Ubulla, the port of Basra²). The Haffār then, is evidently an artificial work of the early Islamic period and could not have been in existence during the Hellenistic era nor in the time of Pliny.

On the location of Charax Spasinou at Khorramshahr (formerly Mohammera) Rawlinson (1839) at first agrees with the Saint-Martin theory but in a later paper (1857) states that the site should be about ten miles above Mohammera creek (the Haffār)³). Rawlinson alters his earlier opinion partly because he himself had found no trace of the great embankments mentioned by Pliny at the Khorramshahr site and partly because he thought the Characenean city of Forāt to have been located at that place⁴). A few later scholars have also shown some scepticism for the Khorramshahr site. One of the most recent of these has been Professor R. Ghirshman who suggests that the Karkheh is the Eulaeus and who further places Charax somewhere to the north of Khorramshahr⁵). Despite such objection, however, almost all modern

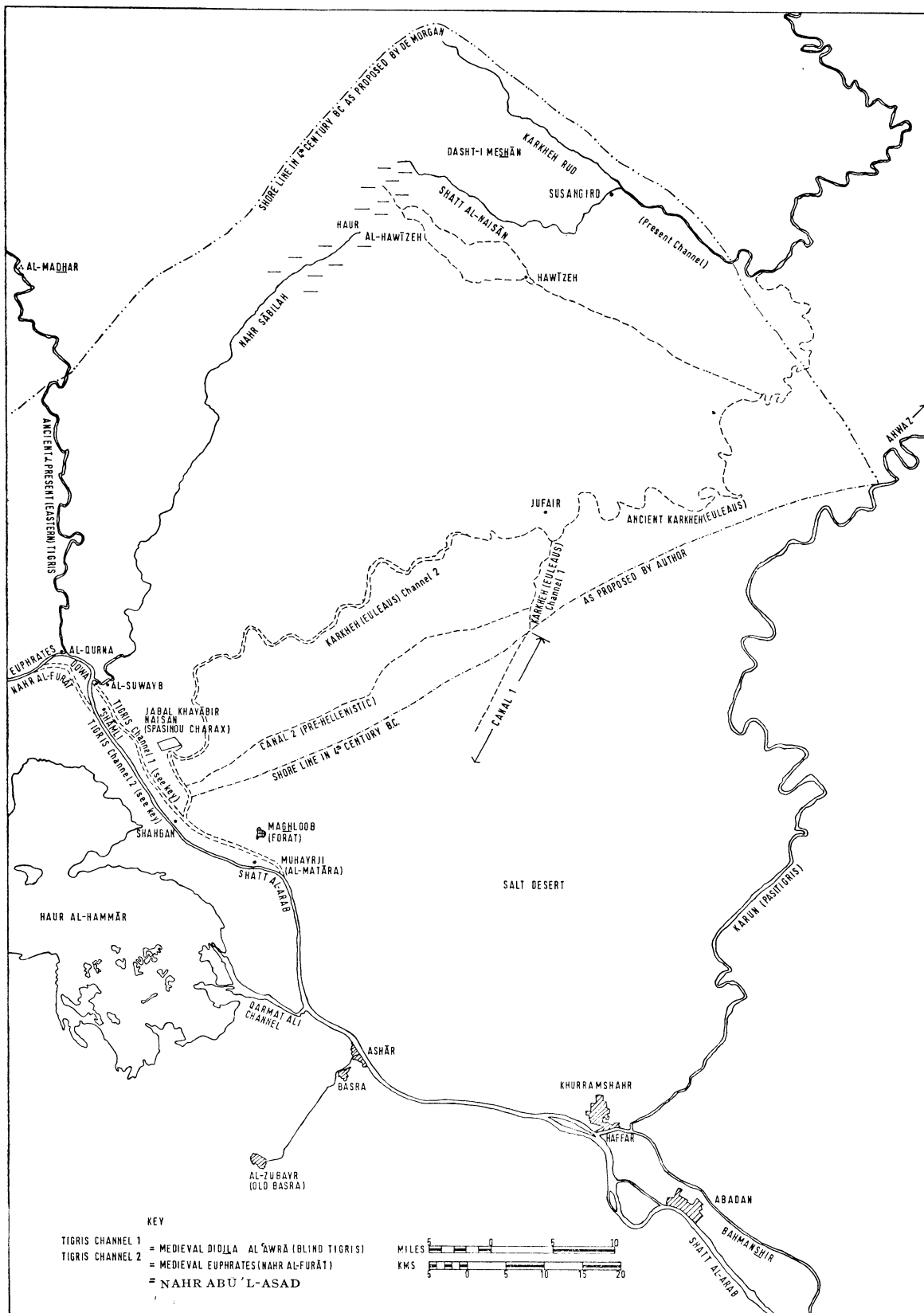
1) ẖudāma, *Bibl. Geog. Arab.* (ed. De Goeje) Leiden, V p. 194.

2) Muḳaddasī, *Bibl. Geog. Arab.* III p. 419.

3) Rawlinson, ‘March from Zohab’ . . . *op. cit.* p. 88; ‘Notes on Ancient Geography of Mohamrah’ *op. cit.* p. 187. On Charax at Khorramshahr see F. Andreas in *Pauly-Wissowa* I, 1394 sq.; Herzfeld in F. Sarre and E. Herzfeld, *Archäologische Reise*, I, p. 251; and Streck *op. cit.* p. 153.

4) Rawlinson has placed Forāt at Mohammera = Khorramshahr largely because the estuary of the Karun below Khorramshahr is called Khor Bahmanshīr, an Arab contraction of the Sasanian name for Forāt, Bahmān Ardashīr. Such reasoning would seem inconclusive. See Rawlinson’s ‘Notes on Ancient Geography’ . . . *op. cit.* p. 187

5) R. Ghirshman, *The Island of Kharg*, Tehran 1960, p. 3.



historical maps of the Hellenistic-Parthian cities of the Persian Gulf region, show Charax Spasinou at Khorramshahr¹). This then is the current state of research on the problem of Charax.

The author's own attention was drawn to the Charax question in 1962 by Dr. A. D. H. Bivar who understood that the Karkheh represents the Greek Eulaeus and who first noted the Haffār canal to be of no earlier than Islamic date. Dr. Bivar, like Rawlinson, had also failed to find any remnants of the Charax embankments in the area of Khorramshahr. He therefore advised the writer that the great city of Hyspaosines should probably be sought near the place where the Karkheh enters the Tigris.

The point at which the present Karkheh, under the name Suwaib, joins the Shatt al-Arab just below the modern town of al Qurna in Iraq, is, of course, well known. But there is no evidence of substantial cultural remains in this vicinity. Bivar and the writer thus decided that Charax might be found near the confluence of an older course of the Karkheh with the Tigris. It was from this beginning then that the writer undertook to determine and confirm the Hellenistic names of the rivers of Khuzistan and to initiate a search for an earlier Karkheh canal or course which might lead to Charax.

III. THE SITE OF SPASINOU CHARAX

Throughout the past centuries the southern limits of the greater Mesopotamian-Khuzistan plain has been subjected to an almost constant change in both appearance and extent. Within this alluvial delta country, a number of factors such as area subsidence and uplift, together with silting and consequently land accretion, have variously caused the drying of old lake beds, the creation of new marshes and the frequent redirection of the local river systems. Man has also contributed to shaping the face of the delta. To provide the means of better water transport both within the plain and to the Persian Gulf, and to bring at

¹) See maps in Debevoise *op. cit.* and W. Tarn, *The Greeks in Bactria and India*, Cambridge, 1951, for locations of major Hellenistic and Parthian city sites in the area of this discussion.

least a minimal commercial fertility to this otherwise largely arid land, numerous shipping canals and a maze of irrigation channels have been constructed. But over the past 2,500 years, as rivers continued to alter course and as wider swamps were formed, it often became necessary to abandon older works and to build newer, replacement channels. Thus today the Mesopotamian-Khuzistan plain is closely patterned with a confusing network of long-disused stream courses, canals and ditches. As nearly all of these channels have become completely filled with sand and dust during the centuries of their abandonment, some are no longer readily determinable by surface reconnaissance. Such features are better traced by the discoloration of soil which their protracted lengths reveal to aerial photography. It was therefore to low altitude photographs and related topographical maps that the author turned to consider the past hydrology of the area ¹). The more important successive water courses of our region of study are presented on fig. 2.

The first objective of this examination was to determine where an older arm of the Eulacus-Karkheh might have flowed into the now dry Chaldean Lakes in Southern Khuzistan. If an abandoned canal branching off to the south-west above the mouth of such a channel could be traced to the Tigris, then surely near this latter junction we would find the site of Alexandria = Charax. By such a process Karkheh Channel 1, as determined on fig. 2, was found to fill our requirements. After branching off from a more recent northern course, this earlier Karkheh Channel, as traced on aerial photography, at one time flowed westward to a point near the modern village of Jufair; it then turned sharply south at a point where a further later course, Karkheh Channel 2, continued to the west. Karkheh Channel 1 then followed a natural meander pattern for some 13 miles (21 km) in an almost due southerly direction. The river thereafter cuts to a south-west course by an extended channel that is so absolutely straight that it could only have been

1) The author is indebted to the Khuzistan Power and Water Authority of Ahwaz, for use of aerial photographs of Khuzistan and to the Iraq Petroleum Company for the use of similar material in the Basra area.

an artificial construction. This latter extension of Karkheh Channel 1 is identified on fig. 2 as Canal 1. Approximately $2\frac{1}{2}$ miles (4 km) above the point where the natural Karkheh Channel 1 and the artificial Canal 1 meet, a second, obviously man-made channel, Canal 2, leads off to the south-west. On following Canal 2, still by means of aerial photographs, we find that its course dips to the south-south-west, just below the present Iranian-Iraqi border. It then resumes a more westerly course, passes through a marshy area and emerges to disappear at the edge of the lower channel of Karheh Channel 2, some 3 miles (4.8 km) to the east of the present Shatt al-Arab bed (fig. 2). Here then, we seem to have all the requirements of Arrian's description of the Hellenistic Eulaeus. A former natural outlet of the river, Karkheh Channel 1, which flowed into the now dry Chaldean Lakes and which was kept open at a later period, when the lakes began to recede, by the construction of an artificial extension (Canal 1). We also have an artificial channel (Canal 2), extending from Karkheh 1 to Karkheh 2 (a later intrusion) quite near the Shatt al-Arab (or Tigris). A close study of the available photographs and maps, revealed no likely alternative channels for the placement of these two historically attested outlets. Some three miles (4.8 km) above the western limit of Canal 2 and at a point when Karkheh 2 swings from a westerly curving channel to a course which follows south-south-east, a distinct parallelogram-like formation was noted on the photographs. This appeared to be the obvious outline of the walls of an ancient city. The available topographical maps marked this feature as "Jabal Khayābir". Jabal in Arabic, of course, means hill. But as this whole region of lower Mesopotamia is known to have been built up by the gradual process of land accretion formed from sedimentary material brought down by the rivers, it seemed extremely unlikely that a natural hill would have been found here. The writer reserved further comment until he was able to visit the site. In October, 1965, with the very kind assistance of Mr. Robert Angorley of Basra, a surface reconnaissance of the Khayābir location was arranged. At that time, any doubts as to the artificial origin of the earth works earlier noted were dispelled. Here, indeed, were the considerable remains of

long, dyke like embankments arranged in an essentially rectangular pattern, which is what one would expect for a city of Hellenistic foundation (fig. 3, & Pl. V). The embankments are still very impressive although only the northern and eastern walls remain more or less intact. Few remnants of the washed-out western and southern walls survive today; their full alignment, however, is clearly traceable on aerial photographs as shown in Pl. V. The two surviving walls rise to an approximate average of 4.6 metres in height although they have also been subjected to considerable flood erosion and weathering. On both of these embankments and especially on the eastern wall line, a series of evenly spaced, protruding bastions are visible (fig. 3, & pl. V). The embankments (as the walls of Charax were also called by Pliny) consists almost entirely of earthen fill. Though a great scattering of baked bricks are to be found at most bastions sites (Pl. VI, 1).

A surface examination was undertaken at the north wall bastion marked E on fig. 3. This structure consists of rough courses of broken buff-colored, baked brick masonry secured by a gach (gypsum) cement. No exact measurements of the brick dimensions could be made as no bricks in the exposed coursing were found in a sufficiently intact state. The lower extent of the bastion is deeply buried in rubble. Several loose bricks found amongst the debris now covering the bastion, however, measured $26 \times 26 \times 5$ cm. Two triangular baked bricks found at the same place had the form of equilateral triangles with sides of 30 cm and 25 cm respectively. Both bricks had a thickness of 5 cm. All fragmented bricks in the rubble masonry coursings also measured a uniform 5 cm in thickness. It would thus seem that this bastion, as it stands, represents a reconstruction of the early Islamic period, with material salvaged from earlier structures. Pl. VI, 2 shows several layers of brick still *in situ* on bastion E. This bastion appears nearly square in form. The approximate dimensions are 11×11 meters. The bastion marked F on fig. 3 and pl. 2, no. 1, on the other hand, is of more rectangular construction and measures approximately 12×14 meters. Bastion F is still preserved to a height of 5.5 meters; bastion E is of similar height.

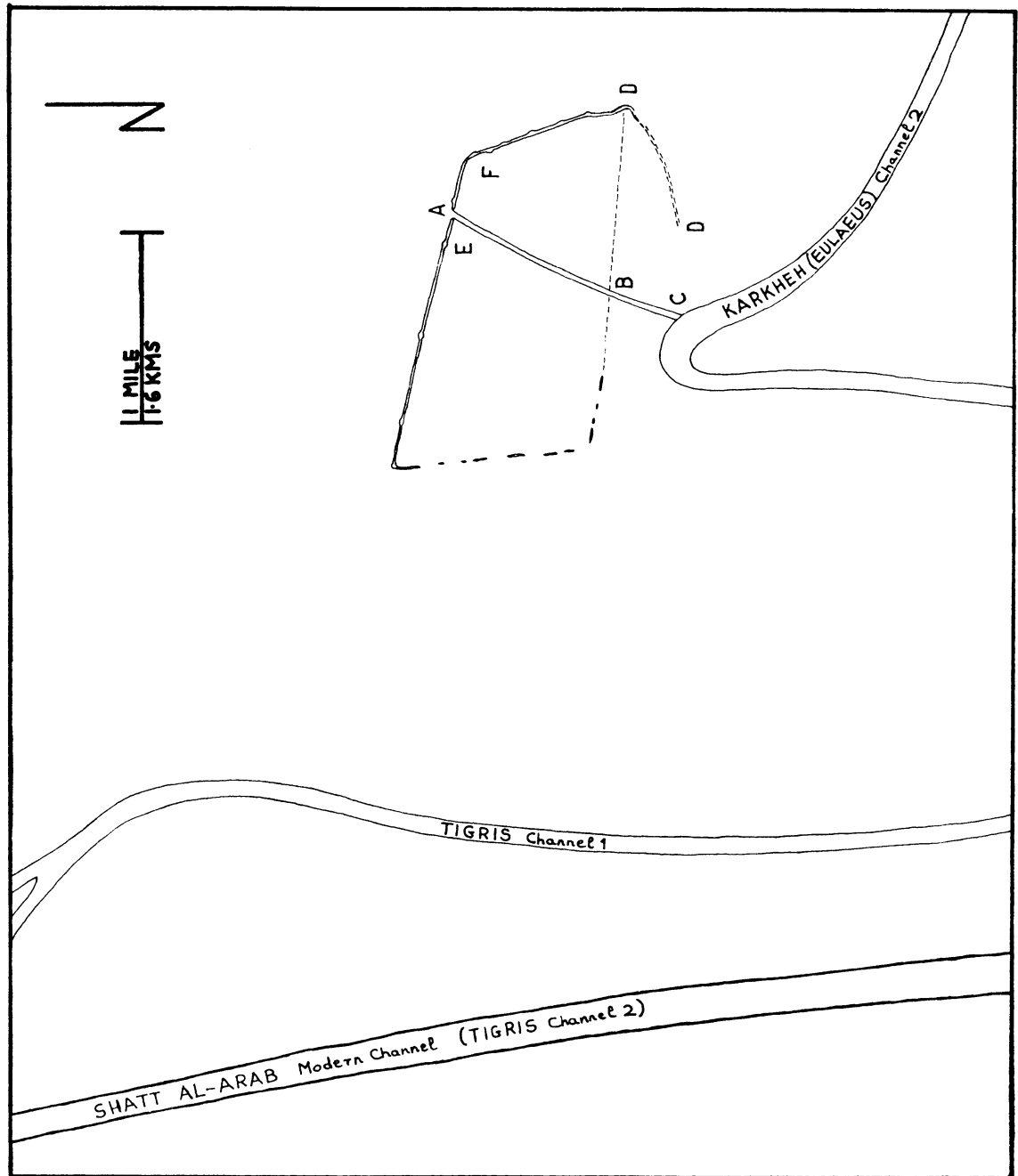
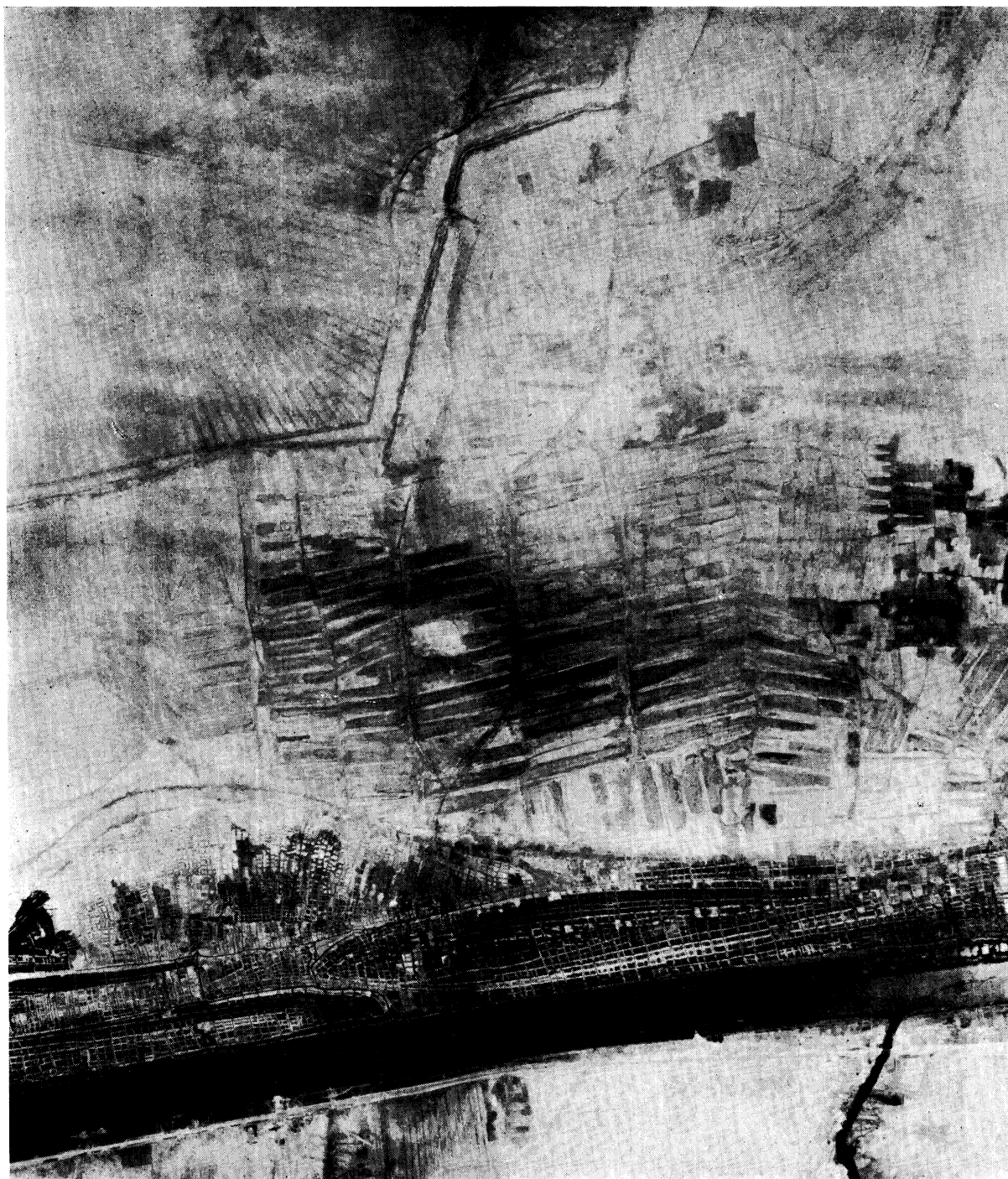


Fig. 3. Planimetric map of "Naisān".



Aerial photograph of "Naisān" and vicinity.



1. View from bastion F on the east wall at "Naisān" showing former gate point in the north embankment.



2. The north embankment at "Naisān" looking west, showing five courses of brick masonry *in situ* on bastion E.



View of "Naisān" from within the site showing mounding and the eastern embankment.



Blue-green glazed ewer found near the walls of "Naisān"

The long embankment walls were provided with considerable added strength by the spaced insertion of these brick towers. But whether the towers themselves were built on a solid masonry foundation, or if they rest, in part, on the earth fill of the embankments, is a question which cannot be answered without excavation.

The northern length of the city wall measures approximately 1.74 miles (2.8 km); the western wall .93 mile (1.5 km); the eastern .80 mile (1.3 km) and the southern embankment 1.83 miles (2.94 km). Pliny states that the site of Charax measures some 1.84 miles (2.96 km) in breadth¹). This then would almost exactly equal the length of the southern embankment of the Jabal Khayābir enclosure. The parallel northern wall is slightly shorter because of the unequal lengths of the east and west dykes.

It would appear that at some later date the southern embankment wall was extended, in a gradually curving alignment, further to the southwest of the original dyke. Vestiges of such an extension are shown on fig. 3 and pl. V. This extension, at one time, may have enclosed the harbor area of the city which was situated on the old Eulaeus = Karkheh outside of the earlier city walls. The west and south embankments were no doubt partly washed out by successive floods of the Shatt al-Arab, which, as we have already noted, flows less than three miles (4.83 km) to the west of the site. But the later relocation of part of the south wall would also account for the much more complete destruction of the corresponding portion of the earlier earth works.

The main market street of the city can be determined on available aerial photographs. This broad roadway is shown, in fig. 3, leading in from the desert, through a gate opening in the northeastern end of the northern wall at point A. The road then cuts southwest through the city for .82 mile (1.34 km); passes out from the walls at point B; and continues for a further .33 mile (.54 km) in unaltered alignment until

1) Pliny VI, 138, notes that Charax measures II *p.* (i.e. 2 *milia passuum*) in breadth. As a Roman mile is approximately 8% or 142 yds. shorter than a standard English mile, the actual length of Charax when converted to modern measuring units is 1.84 miles or 2.96 km. For the length of the Roman *mille* see entry on mile in the *Shorter Oxford Dictionary*, Oxford 1964, I, p. 1249.

it reaches the bend of Karkheh Channel 2 below the walls at point C. The main street of Seleucia on the Tigris entered from the desert, through that city and out again to the Tigris bank in much the same way as that of the Khayābir site. The point where the Khayābir road meets the bending of the Karkheh Channel 2 must certainly have been the harbor of this city which I believe we may reasonably call Charax.

The identification of Jabel Khayābir as Charax Spasinou was further confirmed when the writer enquired of the Arab inhabitants at the nearby village of Al-Suwayb if these artificial embankments were known by any other name. The villagers were unanimous in answering that the site was also called Naisān, most certainly a later modification of the early Islamic name for Charax, Maisān. A second example of this orthographic change may be found farther north in the area west of Susangird in Khuzistan. A side arm of the present Karkheh river is there identified by the Arabic name of Shatt Naisān (fig. 2). The district of Khuzistan through which this water course drains, however, still retains its Sasanian name of Dasht-i Meshān of which Maisān and Naisān are certainly variants. Naisān therefore appears to constitute a purely local survival of the last known name of the city of Alexandria = Antiochia = Charax = Kark Maisān.

Aerial photographs show quite clearly that an older, now abandoned channel of the Tigris estuary, at one time flowed from between 1 and 1½ miles (1.61 to 2.5 km) to the east of and parallel to the present course of the Shatt al-Arab below al-Qurna (page 46). This earlier course is represented as Tigris Channel 1 on figs. 2 and 3. Part of the dry bed of Tigris 1 is also visible on Pl. V. Karkheh Channel 2, may be traced as emptying into Tigris Channel 1 just opposite the modern village of Shahban some five miles (8 km) below the site of Charax. Tigris Channel 1, therefore, must have been the normal course of that river at the time of Pliny's location of Charax. Almost the entire 1½ miles (2.4 km) extent of land which lies between the western wall of Charax and Tigris Channel 1, has been built up into a series of parallel embankments (Pl. V). These dykes are now much reduced and washed away but from the considerable lengths which still remain, they would appear,

in places, to have originally reached as high as 2 and 3 meters. It would indeed be difficult to assume that these extensive constructions were intended merely as irrigation works. Many of them have in fact been cut through by later dug irrigation ditches. As noted on Pl. V, the upper limits of this dyke system bends to the north-east above Charax while the lower reaches fold in to the southeast below the city. Such purposeful alignment would certainly suggest that the dykes might have been intended to divert the flood waters of the Tigris away from the embankments of Charax. But the mounds were more probably formed during land scraping operations carried out in the early Islamic period by African negro slaves known as the *Zandj*.

During the 7th to the 9th century these *Zandj* were widely employed in lower Mesopotamia to remove the *sebākeh*, the salt saturated top soil, from agricultural land¹). The deeper soil, being less salty, was thus made more cultivable. Since Maisān was certainly an occupied site during the first centuries of Islam, the *Zandj* were quite possibly employed in that area. Many similar lengthy dyke-like mounds of this scraped-out soil are to be found in the Basra region.

Several hours of surface reconnaissance within the Jabal Khayābir enclosure were not very instructive. The whole site has been largely washed out as a result of centuries of unrestricted flooding by the Shatt al-Arab. In general the land surface appears to be even with that of the area surrounding the city. The clay underfooting of the site is very highly compacted, a further indication of long periods of water coverage.

Residents of Al-Suwayb indeed confirmed that until 1956 when the Wadi Tharthar Barrage constructed across the Tigris at Samarra was placed in operation, the embankments of "Naisān" were annually surrounded by the Spring flood waters of that river²). It would seem quite probable then, that this yearly flooding effect has deposited a considerable quantity of sedimentary material over both the whole of

1) On the *Zandj* see 'Zandj', *Enc. Islam* IV, p. 1213.

2) The barrage now diverts considerable water from the Tigris into the Wadi Tharthar depression of the central Mesopotamian desert; thus relieving the river of much of its spring flood crest.

the Charax site and upon the alluvial country which it adjoins. A deeper probing of the city area would no doubt produce more substantial structural remains than are currently visible on the surface. Because of these frequent periods of inundation, almost all potsherds noted within the embankment boundaries were in a waterworn, fragile condition. By far the greater number of sherds were buff-colored kitchenware of sandy texture and uncertain age. However, in the extreme southeastern corner of the enclosure, where some slight mounding has survived (Pl. VII), four of five pieces of green and greenish-yellow glazeware were found lying along the top surface of the eastern embankment wall. The glaze in all cases, has suffered greatly from exposure. None of the sherds measured more than 6 cm across and none were patterned with incised or other designs, so it is extremely difficult to determine their date. However it should be noted that yellow-green and green glazes are commonly known from the Parthian period, the era of Charax's greatest prosperity. Such glazes were, for example, recovered in abundance from the Parthian levels at Seleucia on the Tigris¹). Of course any serious discussion of the pottery of Charax must await excavation.

The writer was shown one intact pottery ewer, minus handle, by a resident of Al-Suwayb, which was stated to have been dug up near the walls of "Naisān". This vessel, illustrated in Pl. VIII, measures 15 cm in height and has a diameter measurement of 4 cm at the base, 8 cm at its greatest expanse and 2 cm at its rim. The base is flat surfaced. Concentric bands are incised about the middle portion. The ewer was covered with a thickish blue-green glaze; the clay body was of a cream-colored, medium texture. Pope illustrates a blue-glazed vessel of almost exactly the same form although more elaborately incised, which he calls early Islamic²). It is extremely difficult, however, to determine the date of

1) On Parthian ceramics see R. Ettinghausen, 'Parthian and Sasanian Pottery' in *A Survey of Persian Art*, (ed. A. Pope) Oxford, I, p. 651 and N. Debevoise, *Parthian Pottery from Seleucia on the Tigris*, University of Michigan Studies, Humanistic Series, Ann Arbor, XXXII, 1934.

2) Pope, *op. cit.* IV plate 191-A.

any of these blue-green wares. Ewers in silver of almost the identical bulbous shape, are well attested from the Sasanian period¹). The example found at Charax is possibly 7th century—either late Sasanian or quite early Islamic.

Several buff-colored baked bricks measuring 28 cm square and 4 cm thick were found within the city site. They are no doubt of early Islamic date. Triangular bricks measuring 30 cm to a side and only 3 cm in thickness, were also found.

Some further mention must be made of the location of Charax as related to the references of Arrian and Pliny. It has already been noted that the point at which the old Eulaeus Canal 2 approached Tigris Channel 1, is situated some three miles (4.83 km) below the site of Jabel Khayābir (fig. 2). Pliny, as we remember, stated that Charax, in his time (about A.D. 70), stood on a raised area of ground with the Tigris on the right and the Eulaeus to the left, at the point where these two rivers unite (page 21, fn. 3). What we must distinguish here is the separate channels of the older artificial Eulaeus Canal and the later natural course of the Eulaeus (Karkheh Channel 2). Now, after abandoning its earlier outlet into the Chaldean Lakes (Karkheh Channel 1), the Eulaeus altered its direction of flow below the present village of Jufair. The river at this time of change, broke a new channel which extended for some 3.5 miles (5.63 km) in a natural meandering regime through the salt desert to the southwest of the old bed. This latter channel then turned sharply to the south before swerving west again below Charax, and then south once more, to enter the Tigris, as earlier noted, at Shahban. The full length of the channel is still clearly determinable on aerial photographs and a small portion of it may be seen turning in a sharp bend below Charax on Pl. V.

Pliny makes no mention of a Eulaeus canal but speaks only of the river. We may therefore conclude that Karkheh Channel 2, had already cut through to the Tigris when Hypsoasines raised the great embankment of the city. Thus the Karkheh must have altered from Channel 1 to Channel 2, in the Seleucid period.

1) *Ibid.*, I, p. 748, fig. 261 and IV, plate 223.

IV. FURĀT AL-MAISĀN AND THE OLDER CONFLUENCE OF THE TIGRIS AND EUPHRATES

Some consideration will now be given to the problem of the former confluence of the Tigris and the Euphrates. The location of the great emporium of Charax called Forāt by Pliny, Bahmān Ardeshr under the Sasanians, Perāt de Maishān in Syriac texts and Furāt al-Basra by the Arabs, will also be considered. This second city of Characene, as earlier noted (p. 25), was the assembling place for merchant caravans plying overland between the upper Persian Gulf and the western desert trading centres of Petra and Palmyra. But before attempting a location for Forāt, it will be necessary to present a brief description of the courses of the lower Tigris and Euphrates at the time of our enquiry.

During the first centuries A.D. the Tigris, below Mādhārāyā (the modern Kut al-Amāra) followed in its upper length, the same general course as it does today. Approximately 3 miles (4.83 km) below al-Qurna, however, near the modern village of Dowa, this older Tigris arm cut a slightly meandering channel, which flowed from one half to one and one half miles (.8 km to 2.8 km) west of and parallel to the present upper Shatt al-Arab (fig. 1). Here, of course, is Tigris Channel 1 which we have already determined to have been the normal arm of that river at the time of the ascendancy of the State of Characene (page 42). The lower extremity of this now abandoned Tigris bed is clearly shown on aerial photographs to have joined the present Shatt al-Arab 2 miles (3.22 km) southeast of the village of Muhayrij and just over 12 miles (19.32 km) below the embankments of Charax (fig. 2). Now this measurement presents an interesting point for Pliny states that Forāt was situated on the Pasitigris 11 miles (17.7 km) below Charax. But if the Pasitigris is actually the Karun, a point which we have already established (page 30), and if Charax is indeed Jabal Khayābir, then the Pasitigris would be situated too far to the east of Charax to allow Forāt or any other occupied site on that river, to measure a distance of only 11 miles (17.7 km) from Charax. Thus we must think rather in terms of placing Forāt on the old Tigris channel, the same river on which we have shown Charax to be situated. In this

context, however, we must also remember that Strabo has noted that the Tigris at its outlet is called Pasitigris, an inaccuracy which Pliny may have copied from the earlier geographer.

That the placing of Forāt on the Tigris is in fact correct is confirmed by Balādhurī who notes that Furāt Maisān (the Arabicization of Forāt) was to be found on the left bank of the Dījlā al-ʿAwra i.e. the Blind Tigris ¹⁾ (our Tigris Channel 1) to the north of the port of Ubulla. Yāqūt (quoting Ḥamza al-Iṣfahānī) further confirms that Furāt, under its Sasanian name of Bahmān Ardashīr (Arabicized to Bahmanshīr), was situated on the east side of the Tigris ²⁾. Forāt should therefore be sought on the left bank of Tigris Channel 1, just above the point where that river formerly joined with the Shatt al-Arab. But for a clearer understanding of this problem a further consideration of the various rivers will be necessary.

According to Yāqūt, during the reign of the Sasanian King Bahram V (421-438) the Tigris had already ceased to use its normal eastern and present channel ³⁾. The destruction of dykes and resultant flooding which occurred during the reigns of Peroz (459-484) and of Khusro II (590-628) apparently fixed this change of the earlier lower course of the river ⁴⁾. When the Muslim Arab armies advanced into Mesopotamia in the early 7th century, therefore, we find the main channel of the Tigris passing a considerable distance to the west of its traditional bed below Kūt al-ʿAmāra (fig. 1). The newer course flowed more directly south, past the city of Wāsiṭ, which the Arabs had founded ⁵⁾. Some 60 miles (96 km) below Wāsiṭ the Tigris fell into the Baṭīḥa, the swamps

1) Balādhurī, *Futūḥ* (ed. De Goeje) 1866, 342 sq.

2) Yāqūt I, 770.

3) *Ibid.*, I, 669.

4) *Ibid.*, I, 676.

5) In the past, some writers have considered the more westerly channel, the Nahr Gharrāf (present Shatt al-Haiy), to be the medieval Tigris (see fig. 1). But the location of the ruins of Wāsiṭ beside a now dry river bed, the Dujaila-Shatt al-Akhadhar, situated to the east of Nahr Gharrāf, would confirm the Wāsiṭ channel as the major medieval Tigris course. On this identification see F. Safar, *Wāsiṭ*, Cairo, 1945, fig. 1 and p. 6-7.

or lagoons which today still fill much of lower Mesopotamia ¹⁾. After draining through a series of these lagoons, each joined by a connecting channel, the Tigris, according to Ibn Serapion (903), re-emerged from the Baṭīḥa by the Nahr Abū 'l-Asad canal ²⁾ (fig. 2). Near a place called al-Matāra the Nahr Abū 'l-Asad flowed into the *Didjla al-'Awrā*.

There can be little doubt that the Nahr Abū 'l-Asad is in part to be identified with the length of the upper Shatt al-Arab which at present flows between Shāmlī, six miles (9.6 km) south of al-Qurna, and Muhayrij, some twenty miles (32.2 km) farther downstream. Near this latter point was its confluence with Tigris Channel 1 (at the time in question occupied only by the water of the Blind Tigris). Aerial photographs, moreover, clearly show an older arm of the river, branching to the right of the present Euphrates channel, some two miles (3.2 km) before the river's modern confluence with the Tigris at al-Qurna. This now abandoned channel can be further traced turning sharply to the south two miles (3.2 km) past its point of divergence. It then continues south-south-east for 4 miles (6.4 km) before entering the present Shatt al-Arab near Shāmlī. The course of this older bed has been drawn on fig. 2 as determined from the photographs, and is marked Tigris Channel 2 ³⁾.

After the Tigris had changed to its western course, the older eastern channel below the bifurcation at Kut al-Amāra was left almost completely dry as far south as al-Madhār. This city of al-Madhār is mentioned by the early Arab writers as the capital of the Maisān district at the time of the Arab conquest ⁴⁾. It must therefore have replaced the already much diminished Forāt as a seat of local government at some time in the late Sasanian period. Though al-Madhār no longer exists today, the site has

1) G. Le Strange, *The Lands of the Eastern Caliphate*, 1905, p. 26.

2) Ibn Serapion (Trans. Le Strange) *Jour. Roy. Asiatic Soc.*, Apr. 1895, p. 297.

3) *Ibid.*, p. 299.

4) Balādhurī, 342, 16 and Ibn Sa'd, VII, 23, 5. When the capital of the old Sasanian province of Shādh-i Bahmān (i.e. Maisān, Middle Persian Meshān) was transferred to Furāt (before A.D. 410) Kark Maisān remained the capital of one of the four *tassudj* or sub-districts of the province, which was also called Maisān. The other *tassudj* were Bahmān Ardashīr (Furāt); Dasht-i Maisān and Abar-Kubadh. See ẖudāma, *op. cit.* VI, 236.

been determined by Stark and others from the location of a surviving shrine known to have been at that place¹). The site is placed on fig. 2 some 30 miles (48.3 km) above al-Qurna, on the eastern bank of the Tigris.

As far north as al-Madhār, a backwater, maintained partly by tidal action, continued to fill the lower length of the otherwise deserted eastern Tigris. The channel was also supplied by water draining from the Haur al-Hawizeh marsh into which part of the Karkheh emptied at that time. As this older course was dammed at al-Madhār, the tidal backwater did not extend farther north than that point. It is because of this restricting barrage that the contemporary Arabs called the al-Madhār channel 'Didjla al-ʿAwra'². This signifies 'The Blind Tigris' (already mentioned above), and to the same branch other names were also applied. Yāḳūt, for example, calls the channel 'Nahr Maisān'³). Below the confluence of this channel and the Nahr Abū'l-Asad the combined course of the two waterways to the sea—the present Shatt al-Arab—was also sometimes referred to as the Blind Tigris⁴).

We turn now to the Euphrates (Arabic Nahr al-Furāt) in the early Islamic period⁵). The river, as then situated, is described by the geographers as emptying its waters into the Baṭiḥa by two separate channels, the one below Kufa, and the other south of Hilla⁶). For some miles the waters of the Euphrates (al-Furāt) continued to pass through the swamps, though they eventually reunited to flow out into the Nahr Abū 'l-Asad canal. During the later Parthian and Sasanian periods, when the Tigris still maintained its eastern course (through al-Madhār and past Maisān) the Nahr Abū 'l-Asad must have been fed almost entirely by the Euphrates⁷).

1) The tomb of 'Abd Allāh bin 'Alī. See *Enc. Islam*, s.v. Maisān, p. 151.

2) Ibn Serapion, *op. cit.* (commentary Le Strange) p. 300, fn 1.

3) Yāḳūt II, 553; *Enc. Islam*, s.v. Maisān, p. 150.

4) *Enc. Islam*, s.v. Maisān, p. 151.

5) The Greek name for this river, i.e. Euphrates; the Arabic Furāt; Syriac Perāt and old Persian Ufratu, are all derived from the still older Neo-Babylonian identification of Purattu. See R. Kent, *Old Persian* (American Oriental Series 33) New Haven 1953, p. 176.

6) Le Strange, *op. cit.* p. 74.

7) According to Balādhurī p. 293, this channel was named after Abū 'l-Asad, a

It has been shown above that Tigris Channel 2 was at one time not the common outlet of both Tigris and Euphrates, as it is at present. It was the channel of the Euphrates alone, and was then known to the Arabs both as the Nahr Abū 'l-Asad and as the Nahr al-Furāt. Thus in the Middle Ages there was no confluence of the two rivers immediately below al-Qurna. This junction is in fact first mentioned by the English traveller John Newberie in 1581¹). The present cross-channel from Dowa on Tigris 1 to Shāmlī near Tigris 2 (fig. 2) must also be of fairly recent formation.

Thus the two separate channels of the Nahr Abū 'l-Asad (Nahr al-Furāt) and the Blind Tigris followed roughly parallel courses before converging finally below the site of Forāt. This site we have tentatively place on Tigris Channel 1. A confirmation that the two rivers were closely aligned in this way is found in Yāḳūt (s.v. Furāt) who, quoting Ḥamza Iṣfahānī, states that another name for al-Furāt is Falāḏhrūd. The first component of this name, *falāḏh*, is explained as the Persian word for harness-mate and is applied to the Nahr al-Furāt, we are told, because that river 'is beside the Didjla just as a paired horse would walk beside its bridle-fellow'²).

It is easy to understand why the city of Forāt (al-Furāt) was so named by the pre-Islamic inhabitants of Mesopotamia. The emporium of Characene became identified with the Aramaic name of the Euphrates (Forāt), which flowed into the 'old' Tigris a short distance below that city. When the Tigris changed its course into the Wāsiṭ channel, the Nahr Abū 'l-Asad (Nahr al-Furāt) came to carry the waters of both Tigris and Euphrates. However, the old Tigris course still held the tidal waters of the Blind Tigris, and in this sense it can be seen that

freedman of the Caliph Mansur (754-775), who as commander of the troops at Basra must have widened the canal. Yāḳūt IV, 830, states that the Nahr Abū 'l-Asad already existed before the Arab conquest. This agrees with a statement of Pliny, VI, 31, 122, who, writing before A.D. 70 notes that a "long time ago" the Euphrates was dammed and its waters only discharged into the sea by way of the Tigris, i.e. via the original channel of the Nahr Abū 'l-Asad.

1) See S. Purchas, *His Pilgrimes* (folio 1625-26), V, 1411 sq.

2) See Yāḳūt (as quoting Ḥamza) III, 860.

Yāḳūt is perfectly correct when he tells us that the various arms of the Tigris meet at the place called al-Matāra ¹⁾. In another passage the same author states that al-Matāra is on the bank of the Tigris and the Nahr al-Furāt, at the junction of the two ²⁾. This confluence of the rivers is mentioned by Mustawfī as being north on the Tigris 10 *farsākh* distance from (old) Basra ³⁾. Taking the accepted equation of 1 *farsākh* (the *farsākh-i-Arab*) equals 3.1 miles = 4.99 km ⁴⁾, and beginning our measurement from old Basra (the present al-Zubayr), we proceed 12 miles = 19.32 km (4 *farsākh*) to the Shatt al-Arab. From here to the modern town of Muhayrij set between the former confluence of Tigris Channels 1 and 2, is exactly 6 *farsākh* or 18 miles = 28.98 km (fig. 2). The total distance of 10 *farsākh* or 30 miles = 48.30 km, therefore agrees exactly with that of Mustawfī's measured route. Mahayrij may thus represent the site of the older āl-Matāra; it has been so proposed on fig. 2.

That al-Matāra, rather than Furāt al-Maisān, should be identified with the confluence of the earlier Tigris and Euphrates arms, is not surprising. We have already suggested that the city of Furāt was probably situated several miles above that junction. Indeed, it may well be that al-Matāra, which is not mentioned until the 13th century, later replaced Furāt as the major inhabited site in this area. We have noted that under its Syriac name of Perat de Maishān, Forāt appeared from the year A.D. 410 to 605 as the capital of Maisān and as the seat of the chief metropolitan of that province. But by 790, when records are again available, the seat of this diocese had been moved to Basra ⁵⁾. Ḥamza al-Iṣfahānī ⁶⁾ (887-967) and Balādhurī (page 47, fn 1) both mention al-Furāt

1) *Ibid.*, II, 553.

2) *Ibid.*, IV, 561.

3) Hamd-Allah Mustawfī, *op. cit.* p. 166.

4) See A. Houtum-Schindler. 'On the length of the Persian Farsākh', *Proc. Roy. Geog. Soc.* X, Sept. 1888, p. 586.

5) Chabot *op. cit.* p. 605-606. Basra is again mentioned as the seat, the Maisān dioceses in 893. See C. Sachau, *Ausbreitung des Christentums*, p. 21.

6) Ḥamza al-Iṣfahānī *Tarikh* (ed. Gottwald) p. 46.

without making reference to its earlier designation (under the Umayyads) as a district capital. It would thus seem that by the late 8th Century Furāt was already on the wane as an occupied place. It was certainly long abandoned at the time of Yāḳūt (1225) for he describes it as a ruined place, the remains having been effaced though its name has survived¹⁾. The reason for the city's demise would appear, in part, to have been caused by the lessening importance of the Blind Tigris as the major channel of communication with the north. Flooding may also have had its effect.

Hitherto in our discussion of Forāt, we have dealt at length with the possible site of that city. Not until March, 1966, however, was the writer able to travel once again to Iraq, to carry out further field reconnaissance in the Basra area. The task of searching for Forāt proved not a difficult one. As earlier noted Pliny has provided a valuable clue in stating that Forāt was situated on the Pasitigris (here meant as the lower Tigris) 11 miles (17.7 km)²⁾ below Charax, and indeed at just 10.8 miles (17.4 km) southeast of Jabal Khayābir, an extensive, uneven, mounded area was noted to rise an average of 2 meters above the surrounding alluvial desert. The mound which measures approximately 1.1 miles (1.8 km) by .81 mile (1.3 km) is now called Maghloob (Arabic for conquered), Maghloob is located 2 miles (4.2 km) to the east of the old Tigris (fig. 2). A similar separation of Charax from Tigris Channel 1, was earlier observed. Such a location was no doubt intended to better protect the two cities from the yearly spring flood overflow of the river. Potsherds and broken bricks are thickly scattered over the whole extent of the Maghloob prominence. The entire site, however, has been heavily impregnated with ground salt. The glazes of most of the ceramic sherds noted, have been almost completely dissolved from long exposure to this salt-saturated soil. A few sherds at the periphery of the mound showed a green glaze. The most characteristic of the so-called kitchenwares were thin sherds of a hard, reddish clay, tem-

1) Yāḳūt I, 770.

2) Pliny quotes a distance of XII *p.* (12 *milia passuum*); this is about 11 English miles.

pered with black grit. Rim fragments showed these vessels to be without necks. Characteristic concentric grooves were usually found placed below the rims. Adams classifies this distinctive type of pottery as Parthian ¹⁾).

In conclusion then, there would seem little doubt that Maghloob is, in fact, Forāt. The location is certainly in agreement with Pliny, and indeed, we know of no other city of such extensive size of the historical period, which could claim the site.

As to the present courses of the two rivers, the Tigris returned to its earlier, eastern channel below Kut al-Amāra, by the late 16th century. The al-Qurna juncture of the Tigris and Euphrates, as already noted, occurred at about the same time. The old lower Tigris Channel 1 was still shown to have contained water as late as 1835 when a British expedition under the command of Colonel F. R. Chesney first surveyed the two rivers. At that date this channel was called by yet another name, the Nahr al-Zeragiyah ²⁾).

Since at least the late 19th century the Euphrates has been discharging a large volume of water into the Haur al-Hammār upstream from the al-Qurna confluence with the Tigris. The bulk of this water passes into the Shatt al-Arab from the Hammār lake via the Qarmat Ali channel located about 5 miles (8 km) north of Ashār (fig. 2).

V. THE CHALDEAN LAKES IN THE FOURTH CENTURY B.C.

It would be difficult to conclude this discussion without taking some note of the problem of the so-called Chaldean Lakes. Until the early 1950's, it had been generally accepted by archeologists and geologists alike, that the lower reaches of the Mesopotamian Delta had continued since remote antiquity, to build out into the waters of the Persian Gulf. According to the geologist de Morgan, the enormous quantity of

1) R. Adams, *Land Behind Baghdad*, Chicago 1965, p. 131 (11-j). This pottery type, although possibly of Parthian origin, must have existed in the Sasanian period. Similar sherds were recovered at a purely Sasanian site which will be considered in a later article of this area survey.

2) F. Chesney, *The Expedition for the Survey of the Rivers Euphrates and Tigris* in 1835, 1836, 1837, London 1850 Map case, Map X.

sedimentary material brought down by the various rivers of Mesopotamia and Khuzistan, had indeed caused the land area of the delta to extend some 125 miles (201 km) to the south of its limits of the 4th century B.C.¹⁾ de Morgan, whose proposed 4th century B.C. shore line is given on fig. 2, has made his determination from a study of the distances recorded by Nearchus, while the latter proceeded by ship from the mouth of the Euphrates to the mouth of the Pasitigris (Karun). But as Lee and Falcon note, none of Nearchus' site locations were actually identified by de Morgan. In consequence, the accuracy of the shoreline, as represented, cannot be substantiated.

It is of course known from Nearchus, Pliny and other classical writers that a very large lake or lakes separated the mainland of the delta from what was apparently an extensive area of shoals and tidal mud flats which bordered directly on the Gulf. Into these intervening "Chaldean Lakes", according to Pliny, emptied the Euphrates, the Eulaeus and the Tigris²⁾. From the lakes the united waters of the rivers flowed by a broad estuary through the tidal shoals and out into the Gulf beyond.

Over the past centuries, much of this lake and marshland has silted up. Yet numerous swamps and sufficient remnants of the lakes still survive. It would, however, seem curious when one considers the vast amount of silt which must have passed into these low lying areas, century after century, that the whole land surface has not now been raised to a level of permanent dryness. But here one must turn to geological evidence.

Lee and Falcon demonstrate by a comparison of various earlier charts and maps, that the mud flats of the Mesopotamian delta's farthest extent have, in fact, grown very little during the past 100 years. It has also been shown, by use of aerial photographs, that numerous old irrigation canals in this lower delta region are now either cut across by tidal drainage or submerged under later alluvial deposits. Lee and Falcon submit what appears to be the only logical explanation for this occurrence. "The plains of Iraq and the Persian Gulf occupy a zone in

1) J. de Morgan, *op. cit.* p. 12, fig. 5.

2) Pliny VI, 31.

which gradual subsidence has been taking place during the concluding episode of the mountain building movements of Mesopotamia and South-West Persia"¹). It is thus postulated that in the surviving marsh areas at least, the "balance between subsidence and sedimentation" in the recent past seems to have been finely poised ²). Those sections of the former lakes which have not been subjected to this form of synclinal subsidence, have conversely, long ago been filled by deposits of silt from the rivers. An example of this process of localized land formation will be noted later.

By a careful consideration of historical, archeological, geological and geographical material now available, it would seem possible to approximate the northern limits of the Chaldean Lakes during the 4th century B.C., somewhat more closely than had de Morgan. To begin we return to the point where the old Euleus Canal 2 entered the Tigris Channel 1, just 3 miles (4.8 km) below Spasinou Charax (fig. 2). This canal was almost certainly in existence prior to the building of Alexandria on the Tigris. It is thus quite obvious when Pliny states that at its foundation Charax was located only 1.2 miles (1.9 km) from the sea (the Chaldean Lakes) we must measure not from the city site but 1.2 miles below the Eulaeus Canal 2 which would have led to the Tigris across a normally water free land surface. This establishes a first point of reference in placing the Lake's approximate northern limit at the period of enquiry (fig. 2).

For our second point we return to Karkheh Channel 1, which has already been identified as an earlier course of the Eulaeus. As will be remembered Arrian states that Alexander sailed from the mouth of the Eulaeus to the sea (page 21). This older exit of the river must have been situated close to the point where the natural course of the Karkheh

1) Lee and Falcon, *op. cit.* p. 27.

2) *Ibid.*, p. 38. Some exceptions have been taken to Messrs. Lee and Falcon's theory, notably by M. Ionides and by Prof. Smith in correspondence on 'The Geographical History of the Mesopotamian Plains', *Geog. Jour.* Vol. CXX, Sept. 1954, p. 394 sq. However, R. Mitchell in 'Instability of the Mesopotamian Plains', *Bull. Soc. Geog. d'Egypt* Tome XXI p. 127 sq., has presented comprehensive, and it would seem conclusive geological evidence in support of the Lee & Falcon proposal.

Channel 1, is joined by its artificially constructed extension, Canal 1 (fig. 2). The fact that the beginning of Canal 2, through which the greater number of Alexander's ships proceeded to the Tigris is located, according to our findings, only 2 miles (3.2 km) above the southern limit of Karkheh Channel 1, would further confirm the tentability of this location. Thus it would appear that we have reasonably placed a second reference point in approximating the upper limit of the Lakes in the 4th Century B.C.

The material for our third and final point is provided by Nearchus and preserved in both Arrian and Strabo. As related in the *Indica*, Nearchus sailed through the "lake" into which the Tigris discharges and on into the mouth of the Pasitigris. He then proceeded 150 stades (about 17 miles or 22.4 km) upriver, where, according to Strabo, Nearchus came to the bridge of boats which joins the road leading between Persepolis and Susa¹). Here Alexander passed to Susa with his army and here a meeting was made between the leader and his admiral.

This bridge of boats is generally agreed to have been located near the site of modern Ahwaz. Although founded as the new capital of Khuzistan and named Hormizd Ardashir, by Ardashir I, the site of Ahwaz was long situated on the old southern route between Persepolis and Susa. It has also been noted by de Morgan that at the time of Alexander, larger ships proceeding up the Pasitigris would not have been able to navigate the natural barrage of rock which cuts across the river at the Ahwaz site²). Thus a bridge at this place would seem both practical and necessary.

Strabo, gives the distance between Susa and the bridge of boats as 60 stadia³). But this figure has long been considered an error of transcription. It would indeed, have been impossible for the Chaldean Lakes to have extended to less than 40 miles (64.4 km) below Susa and above the natural rock barrage at Ahwaz even at the time of Alexan-

1) Strabo 15, 5.

2) J. de Morgan, *op. cit.* p. 13.

3) Strabo 15, 5.

der. Thus Müller and others have suggested a corrected reading of 600 stadia (69 miles or 111 km) for the distance¹⁾. Using this latter measure then, it is noted that the distance between Susa and Ahwaz does equal just 69 miles. If Ahwaz is accepted as the site of the bridge of boats, we may then take a further measure of 150 stadia (17 miles or 22.4 km) on the Karun = Pasitigris below this point (fig. 2). We thus have arrived at our third relative point in considering the 4th Century B.C. Chaldean Lakes limits.

When our coordinates are joined, as illustrated on fig. 2, the resulting "shoreline approximation" is shown to follow in an almost direct north-east alignment from the "old" Tigris to the Karun. In comparison with de Morgan's water line for the same period, it is seen that the upper extent of the Chaldean Lakes now appear to be some 36 miles (58 km) farther down the Tigris. The second new fix at the mouth of the Karkheh Channel 1, is set some 55 miles (88 km) below de Morgan's farthest inland point which is situated almost directly to the north. Our third point on the Karun is, of course, identical with that of de Morgan.

It should be noted that the northern limit of the lakes to the east of the Tigris, as proposed by the author, is on a relatively close extended alignment to the present northern shoreline of the Haur al-Hammār, the largest surviving swamp of the delta which lies just opposite, to the west of the Tigris. One might therefore postulate in conclusion, that the northern extent of the westernmost portion of the Chaldean Lakes, has remained very much the same over the past centuries. Such continued preservation of the Haur al-Hammār has indeed, no doubt been due to the finely poised "balance between subsidence and sedimentation" already considered. The old lake bed to the east of the Tigris below al-Qurna, on the other hand, was most certainly not subjected to this type of localised synclinal subsidence, and has, in consequence, long since silted up to form the expansive salt desert which now exists there.

1) C. Müller, *Index var. lect.* p. 1035. Also de Morgan *Op. cit.* p. 11.

An attempt has been made in this discussion to determine the Hellenistic names and ancient regimes of several Khuzistan rivers. These identifications have given a certain clarification to the historical geography of Characene. Further enquiry has led the writer to propose that the site of Spasinou Charax is located at Jabel Khayābir. The site of Forāt is to be found at the mound of Maghloob near Basra. The ancient confluence of the Tigris and Euphrates has been considered and shown on fig. 2. When these several coordinates are established it would appear that the north shore of the Chaldean Lakes lay some distance to the south of the shoreline postulated by de Morgan.